

[0270] The electronic device may further include a PCB on which the input circuit is mounted, and the touch sensor may be mounted on the printed circuit board using the SMT.

[0271] The touch sensor may include a plurality of conductive patterns, and the plurality of conductive patterns may be arranged close to the window while being physically separated therefrom. The electronic device may further include a plurality of contacts configured to electrically connect the input circuit and the plurality of conductive patterns.

[0272] The electronic device may further include a PCB on which the input circuit is mounted. The printed circuit board may be disposed to overlap the window in the direction from the first side to the second side. The plurality of contacts may be disposed between the window and the printed circuit board and may be mounted on the printed circuit board while being physically separated therefrom.

[0273] The antenna radiator may be configured to overlap the touch sensor in the direction from the first side to the second side.

[0274] The ground may be disposed between the touch sensor and the antenna radiator.

[0275] The electronic device may further include a PCB, and the ground may be a part of the PCB.

[0276] The electronic device may further include a display exposed through the first side of the housing.

[0277] An electronic device may include: a housing that includes a window configured to form a first side of the electronic device and a second side that is opposite to the first side; a circuit board that is disposed between the first side and the second side and includes a ground; a first conductive plate and a second conductive plate that are disposed between the first side and the circuit board and are arranged close to the window while being physically separated therefrom; an input circuit configured to detect a first input based on a variation in the capacitance of the first conductive plate and to detect a second input based on a variation in the capacitance of the second conductive plate, and is mounted on the circuit board; a first contact and a second contact, the first contact being configured to electrically connect the input circuit and the first conductive plate and to be mounted on the circuit board and the second contact being configured to electrically connect the input circuit and the second conductive plate and to be mounted on the circuit board; an antenna radiator at least partially disposed inside the housing and/or in at least a part of the housing; a communication circuit electrically connected to the antenna radiator and the ground and mounted on the circuit board; and an antenna matching circuit electrically connected to at least one of the first and second conductive plates and the input circuit and mounted on the circuit board.

[0278] The electronic device may further include: a through-hole formed through the window; a button inserted into the through-hole so as to be pressed in the direction from the first side to the second side; and a push switch mounted on the circuit board and supplied with a current by the press of the button. The push switch may be disposed between the first contact and the second contact.

[0279] FIG. 20 is a flowchart of a method for operating the electronic device 1100, according to an embodiment of the present disclosure.

[0280] Referring to FIG. 20, in step 2001, the electronic device 1100 may electrically connect the antenna radiator 1130 and the communication circuit 1140.

[0281] In step 2003, the electronic device 1100 may electrically connect the antenna matching circuit 1150 to the touch sensor 1110 and the touch input circuit 1120. The touch sensor 1110 may be electrically connected to the touch input circuit 1120 through the antenna matching circuit 1150.

[0282] The matching circuit 1150 may improve the isolation between the touch input device 1110-1 and the antenna device 1100-2. For example, the antenna performance of the at least one antenna radiator 1130 may not be degraded by the touch sensor 1110 and/or the one or more contacts 360-C around the antenna radiator 1130.

[0283] The matching circuit 1150 may be configured such that at least a part of the touch input device 1110-1 supports the operation of the antenna device 1100-2. For example, the touch sensor 1110 and/or the one or more contacts 360-C of FIG. 10 may also serve as an antenna radiator for supporting the antenna device 1100-2 by the matching circuit 1150, as well as supporting the touch input device 1100-1.

[0284] Each of the above-described component elements of hardware according to the present disclosure may be configured with one or more components, and the names of the corresponding component elements may vary based on the type of electronic device. The electronic device may include at least one of the above-described elements. Some of the above-described elements may be omitted from the electronic device, or the electronic device may further include additional elements. Also, some of the hardware components according to various embodiments may be combined into one entity, which may perform functions identical to those of the relevant components before the combination.

[0285] While the present disclosure has been shown and described with reference to certain embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the scope of the present disclosure. Therefore, the scope of the present disclosure should not be defined as being limited to the embodiments, but should be defined by the appended claims and equivalents thereof.

What is claimed is:

1. An electronic device comprising:

- a housing including a window that forms a first side of the electronic device, and a second side that is disposed opposite to the first side;
- a touch sensor disposed adjacent to the window and configured to generate a capacitance;
- an input circuit operably connected to the touch sensor and configured to detect an input based on a variation in the capacitance;
- an antenna radiator at least one of partially disposed inside the housing and a part of the housing;
- a ground operably disposed between the first side and the second side;
- a communication circuit operably connected to the antenna radiator and the ground; and
- an antenna matching circuit operably connected to the touch sensor and the input circuit.

2. The electronic device of claim 1, wherein the antenna matching circuit comprises at least one inductor that is operably connected between the touch sensor and the input circuit.